REMARKS

In the office action, the specification has been objected to, and claims 9 and 15 have been rejected under §112 and §103. In response, the specification has been amended and the following remarks have been put forth. Previously presented Claims 9 and 15 and new claims 16-21 are pending in the application.

The Invention

The present invention is a composition *consisting essentially of* gamma vinyl GABA and vitamin B6. The basic and novel characteristics of the claims are 'gamma vinyl GABA' and 'vitamin B6'.

It is known that gamma vinyl GABA (GVG) is involved in several chemical reactions in the brain. For example, on page 5, lines 7-9, the inventors discuss some of these reactions. The effect that GVG has on the many chemical reactions of the brain is highly influenced by the presence of other compounds. For this reason, Applicant used the transitional phrase "consisting essentially of" in the claims. The addition of compounds, other than GVG and vitamin B6, to the claimed composition, would constitute a material change to the basic and novel characteristics of the invention.

Amendment of the Specification to claim priority benefit

The Applicant has amended the specification to properly reference the parent patent application, now issued U.S. Patent No. 6,713,497, from which this divisional application draws priority.

Objections to the Specification

In the office action, the Abstract has been objected to for reciting the term "novel." In response, Applicant has amended the Abstract to remove the term "novel."

The specification has been objected to for reciting trademarks on pages 4, 5, 10 and 11. In response, Applicant has amended the specification to capitalize the trademarks where

applicable and to correct the spelling of Marion Merrell Dow. The amendments to the specification contain no new matter.

Accordingly, Applicant respectfully submits that the objections to the specification have been rendered moot.

35 U.S.C. §112 Rejection

Claims 9 and 15 have been rejected under §112, second paragraph, as being indefinite in reciting the terms "GABA" and "GABAergic."

In response, Applicant submits that the presently pending claims do not recite either term, independently. The claims recite the known drug GVG (see specification page 4, line 20 through 22) as "gamma vinyl GABA."

Accordingly, Applicant respectfully requests reconsideration and withdrawal of the §112 rejection.

35 U.S.C. §103 Rejection

The Examiner, on page 4, indicates "This application currently names joint inventors". The Applicant's Agent respectfully points out that the present application and the patent application (now issued patent) from which it draws priority name a single inventor, Charles R. Ashby, Jr.

Claims 9 and 15 have been rejected under §103(a) as being unpatentable over Seiler et al. (U.S. Patent No. 4,540,582) in view of Evans et al. (U.S. Patent Application No. 2002/0048612A1). According to the Examiner, Seiler et al. disclose controlling seizures by administering GVG (50mg/kg to 750mg/kg) and glycine, sarcosine or N,N-dimethyl-glycine or a C_1-C_8 alkyl ester thereof. The apparent aim of the teaching is to achieve the anti-seizure effects of GVG using a lower dosage than would otherwise be possible.

The Examiner recognizes that Seiler et al. do not teach a composition consisting essentially of GVG and vitamin B6.

According to the Examiner, Evans et al. disclose compositions containing one or more butyrates and one or more optional ingredients such as antioxidants, antidepressants, memory promoters/enhancers, various vitamins, nutritional and herbal supplements. The Examiner contends that Evans et al. disclose a composition comprising vitamin B6 (0-40mg), L-glutamine, magnesium butyrate and other ingredients. According to the Examiner, the amount of vitamin B6 disclosed in Evans et al. (0-40mg) overlaps with the claimed amount (50 to 100mg/day). The Examiner proposes that because Evans et al. allegedly disclose that transformation to GABA is enhanced when butyrates are formulated with promoters including pyridoxine 5-phosphate, it would have been obvious to one of skill in the art to combine Seiler et al. and Evans et al. and arrive at the claimed invention. Applicant respectfully disagrees.

Importantly, it appears that the Examiner is characterizing GVG as a "butyrate" or an equivalent thereof. This characterization is incorrect. Evans et al. disclose the use of a "substrate for gamma amino butyric acid (GABA)...the substrate transformed into GABA within the brain." See, e.g. page 1, paragraph [0010]. Evans et al. collectively refer to such compounds as "butyrates." Butyrates are, most generally, compounds comprising four (4) carbon atoms (e.g., butyric acid = $C_4H_8O_2$). Clearly gamma vinyl GABA, having six (6) carbon atoms (4-amino-**hex**-5-enoic acid), is not a butyrate nor an analog or homolog thereof.

Evans et al. suggest that butyrates cross the blood brain barrier to encourage the synthesis of GABA (i.e. they "are a substrate for gamma amino butyric acid"). While this appears to be conjecture by Evans et al., it is well known that GABA is formed by decarboxylation of glutamic acid, not through incorporation of an amine group onto butyrates. It is also well known that gamma vinyl GABA (GVG) is not a "substrate for gamma amino butyric acid (GABA) . . . . . the substrate transformed into GABA within the brain." Quite the contrary, GVG is an irreversible inhibitor of GABA-transaminase, the enzyme that deaminates GABA, thereby generating α-ketoglutamate. Evans et al. makes no reference to GVG.

Evans et al. lists **many** optional ingredients, possibly hundreds, one of which is vitamin B6. There is no disclosure that suggests that vitamin B6 is preferred among the disclosed

optional ingredients. Furthermore, there is no disclosure or suggestion of a composition consisting essentially of GVG and vitamin B6.

As mentioned above, the addition of ingredients other than GVG and vitamin B6 would constitute a material change in the basic and novel characteristics of the claimed invention. It is known that (GVG) is involved in several chemical reactions in the brain. For example, on page 5, lines 7-9, the inventors discuss some of these reactions. The effect that GVG has on the many chemical reactions of the brain is highly influenced by the presence of other compounds. For this reason, Applicant used the transitional phrase "consisting essentially of" in the claims. The addition of compounds, other than GVG and vitamin B6, to the claimed composition, would constitute a material change to the basic and novel characteristics of the invention.

In order to establish a prima facie case of obviousness, there must be some suggestion or motivation to modify the reference, there must be a reasonable expectation of success and the prior art reference must teach all of the claim limitations. See MPEP 2143.

Applicant has emphasized the importance of the composition consisting essentially of GVG and vitamin B6, and wherein the vitamin B6 is in an amount of about 50 to 100 mg/day. Upon combining Seiler at al. and Evans et al. all of the claim limitations are not taught. Especially in view of the Examiner's characterization of GVG as a "butyrate" as described by Evans et al.

Accordingly, Applicant respectfully requests that the Examiner reconsider and withdraw the rejection under §103 based on Seiler et al. in view of Evans et al.

The Examiner further adds Baxter et al. as a secondary reference. In Baxter, use of pyridoxine to treat seizures is examined. The teachings of Baxter et al. include the determination of the percentages of seizure cases that were responsive, were possibly responsive and were unresponsive to control through the administration of pyridoxine. There are no suggestions, findings or teaching that pyridoxine-sensitive seizures could be controlled by treatment with vitamin B6 in combination with GVG. In fact, the teachings indicate that seizures of four (4) patients with West syndrome that were resistant to GVG (vigabatrin) were responsive to pyridoxine, thus, teaching away from the combination of vitamin B6 plus GVG.

Further, the Examiner notes that Baxter teach that the usual oral dose of pyridoxine is 30 mg/kg/day to a maximum dose of 1000 mg/kg/day. For a 50 kg person (110 pounds) (a small adult) this would be a range of 750 mg to 50,000 mg of vitamin B6/day and for a 5 kg infant (11 pounds) this would be 75 to 5000 mg/day; a 10 kg child (22 pounds) this would be 300 mg to 10,000mg. The claims of the present application note a dosage range of 50 to 100 mg/day. Thus, clearly the usual dose in re. Baxter et al., for control of seizures is substantially higher than that of the present invention.

Accordingly, the Applicant requests the Examiner reconsider citing the teachings of Baxter et al. as an additional basis for rejection under 103(a).

New Claims

Applicant has added six (6) new claims, claims 16 through 21, and respectfully request the Examiner's consideration thereof. The new claims contain no new matter.

In light of the foregoing remarks, Applicant respectfully submits that the application is now in condition for allowance. If the Examiner believes a telephone discussion with the Applicant's representative would be of assistance, contact the undersigned at your convenience.

Respectfully submitted,

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